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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/761,625	01/22/2004	Meng-An Pan	58268.00350	3541

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TYSONS CORNER, VA 22182

EXAMINER

NGUYEN, TUAN HOANG

ART UNIT	PAPER NUMBER
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2618

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/09/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No. 10/761,625	Applicant(s) PAN ET AL.	
	Examiner Tuan H. Nguyen	Art Unit 2618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 November 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date: _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date: _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed on 11/20/2006 have been fully considered but they are not persuasive.

In response to Applicant's remark on pages 2-9, Applicant argues that Pehlke et al. (U.S. PUB. 2002/0136325 hereinafter "Pehlke") reference cited by the Examiner fails to teach or suggest all of the elements of the claims. Specifically, Applicants argue that Pehlke fail to teach or suggest "receiving an instruction to adjust the output power of power amplifier," "powering on or off at least one branch of the power amplifier according to the received instruction," or "amplifying a signal according to the adjusted output power," as recited in claim 1, and similarly recited in claims 8 and 9. Similarly, Pehlke do not teach or suggest "wherein the transistors are arranged in a logarithmic scale, thereby enabling a logarithmic change in output power with the powering on or off of a transistor". Examiner respectfully disagrees with the Applicant argument.

Consider claims 1, 8, and 9, Applicant should refer to Pehlke reference (see figs. 1, 4 and 9 page 5 [0051]) where as the Examiner interpreted "powering on or off at least one branch of the power amplifier or "amplifying a signal according to the adjusted output power," (by selecting the appropriate branch (14), or combinations of branches (14), the effective size of the branched power amplifier (12) may be adjusted as output signal power requirements change. Thus, the branched power amplifier (12) is configurable (read on "instruction") in the sense that different branches, or combinations

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of branches, may be enabled to effect different peak power efficiencies of the power amplifier) according to the received instruction (configuration) to enable a logarithmic change in output power of the amplifier'.

Furthermore, the Applicant argues that Pehlke reference cited by the Examiner fails to teach or suggest "wherein the transistors are arranged in a logarithmic scale, thereby enabling a logarithmic change in output power with the powering on or off of a transistor" as recited in claim 15. Examiner respectfully disagrees with the Applicant argument.

Consider claim 15, Applicant should refer to Pehlke reference (see fig. 6 page 4 [0045]) where as the Examiner interpreted "wherein the transistors are arranged in a logarithmic scale, thereby enabling a logarithmic change in output power with the powering on or off of a transistor", the output transistor (76B) is coupled to the control transistor (76A) in a manner that causes it to provide the supply current I_{PA} in proportion to the control current I_{AMIN} . The geometry of the output transistor (76B) may be scaled relative to the control transistor (76A) to establish a desired current mirror gain, thus setting the desired relationship between the instantaneous magnitude of the control current I_{AMIN} and the supply current I_{PA} .

Therefore, the teaching of the prior art references still read on.

Base on the above rational, it is believed that the claimed limitations are met by the references submitted and therefore, the rejection are maintained.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1- 5, 8-12, and 15-17 are rejected under 35 U.S.C. 102(b) as being anticipated by Pehlke et al. (US PUB. 2002/0136325 hereinafter, "Pehlke").

Consider claims 1 and 8, Pehlke teaches receiving an instruction to adjust the output power of power amplifier (see fig. 4 page 5 [0051]); powering on or off at least one branch of the power amplifier according to the received instruction to enable a logarithmic change in output power of the amplifier (see figs. 3 and 4 page 2 [0025] and page 5 [0051]); and amplifying a signal according to the adjusted output power (see fig. 4 page 5 [0051]).

Consider claim 2, Pehlke further teaches transmitting the amplified signal (page 6 [0064]).

Consider claims 3 and 10, Pehlke further teaches the instruction specifies a percentage change in power (page 6 [0066]).

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Consider claims 4 and 11, Pehlke further teaches the instruction specifies a dB change in power (page 1 [0007]).

Consider claims 5, Pehlke further teaches the powering on or off a branch of the power amplifier linearly in dB changes the output power of the amplifier (page 6 [0064]).

Consider claim 9, Pehlke teaches a receiving engine capable of receiving an instruction to adjust the output power of power amplifier (see fig. 4 page 5 [0051]); and a determining engine, communicatively coupled to the receiving engine, capable of determining how many branches of a power amplifier to power on or off according to the received instruction to enable a logarithmic change in output power (see figs. 3 and 4 page 2 [0025] and page 5 [0051]); and a power amplifier engine, communicatively coupled to the determining engine and the power amplifier, capable of transmitting the determination to the power amplifier (see fig. 4 page 5 [0051]).

Consider claim 12, Pehlke further teaches the powering on or off a branch of the power amplifier linearly in dB changes the output power of the amplifier (page 6 [0064]).

Consider claim 15, Pehlke teaches a power amplifier, comprising: a plurality of branches for controlling transistors (see fig. 2B page 2 [0022]); and a plurality of transistors, each transistor being communicatively coupled to a branch of the plurality of branches (see fig. 4 page 4 [0041]), wherein the transistors are arranged in a

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logarithmic scale, thereby enabling a logarithmic change in output power with the powering on or off of a transistor (see figs. 3, 4 and 6B page 2 [0025] page 4 [0045] and page 5 [0051]).

Consider claim 16, Pehlke further teaches the powering on or off a branch of the power amplifier linearly in dB changes the output power of the amplifier (page 6 [0064]).

Consider claim 17, Pehlke further teaches a transmitter comprising a power amplifier (col. 15 lines 11-14) (page 6 [0061]).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically taught or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 6-7 and 13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pehlke et al. (US PUB. 2002/0136325 hereinafter, "Pehlke") in view of Eidson et al. (U.S PAT. 6,255,906 hereinafter "Eidson").

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Consider claims 6 and 13, Pehlke teaches receiving an instruction to adjust the output power of power amplifier; powering on or off at least one branch of the power amplifier according to the received instruction to enable a logarithmic change in output power of the amplifier; and amplifying a signal according to the adjusted output power.

Pehlke does not explicitly show that thermometer coded power control words are used to power on and off branches of the amplifier.

In the same field of endeavor, Eidson teaches thermometer coded power control words are used to power on and off branches of the amplifier (col. 5 lines 27-34).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use, thermometer coded power control words are used to power on and off branches of the amplifier, as taught by Eidson, in order to provide the power amplifier is operated as a completely digital device with a certain degree of digital pre-distortion compensation.

Consider claims 7 and 14, Eidson further teaches the thermometer coded power control words ensure monotonic power control (col. 5 lines 31-34).

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

7. Any response to this action should be mailed to:

Mail Stop_____ (Explanation, e.g., Amendment or After-final, etc.)

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

Facsimile responses should be faxed to:

(571) 273-8300

Hand-delivered responses should be brought to:

Customer Service Window

Randolph Building

401 Dulany Street

Alexandria, VA 22313

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan H. Nguyen whose telephone number is (571)272-8329. The examiner can normally be reached on 8:00Am - 5:00Pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Maung Nay A. can be reached on (571)272-7882882. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information Consider the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

T.N.
Tuan Nguyen
Examiner
Art Unit 2618

NAY MAUNG
SUPERVISORY PATENT EXAMINER